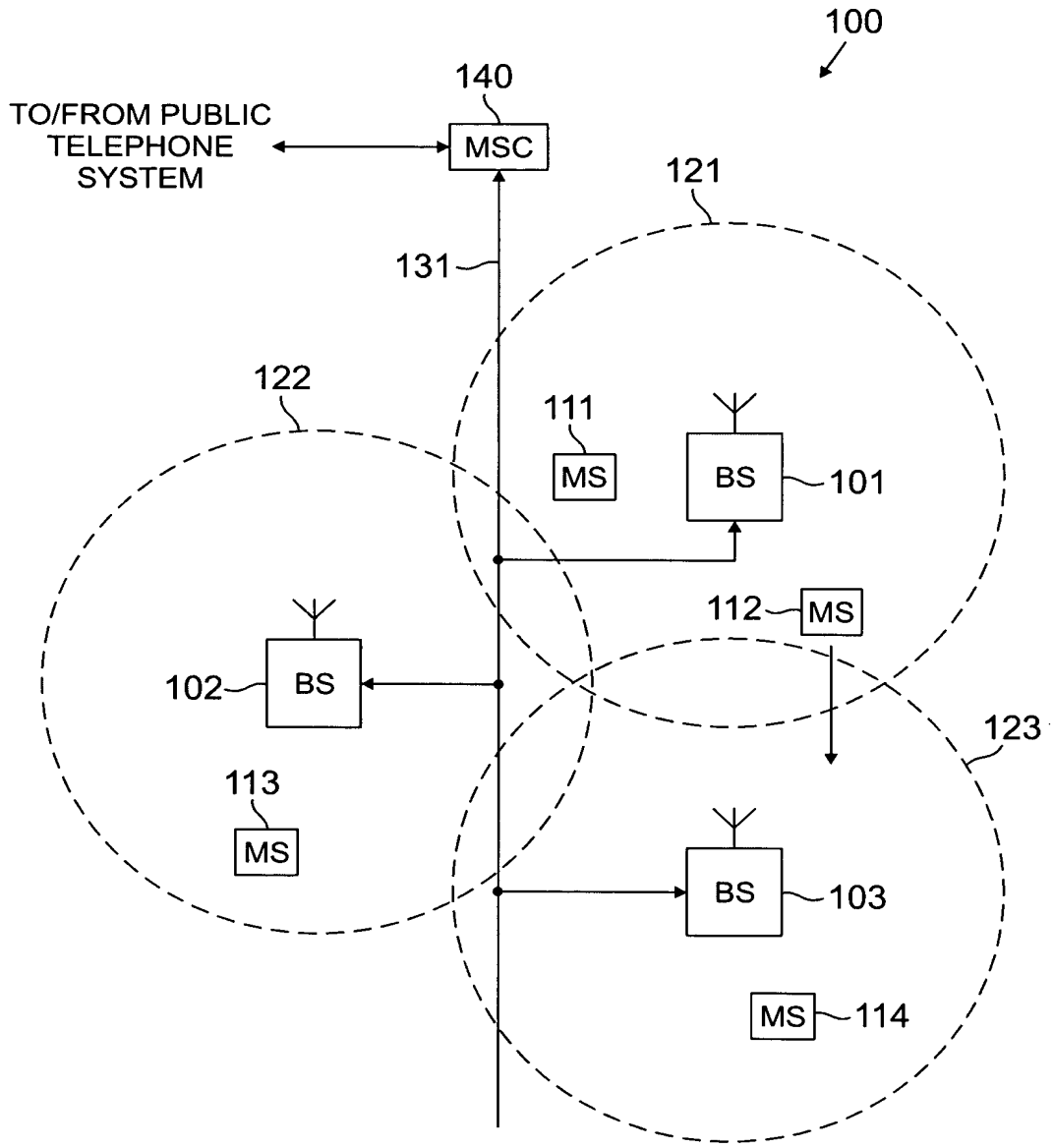

100
140
TO/FROM PUBLIC TELEPHONE SYSTEM
MSC
121
131
122
111
MS
BS
101
112
MS
102
BS
123
113
MS
BS
103
MS
114

FIG. 1

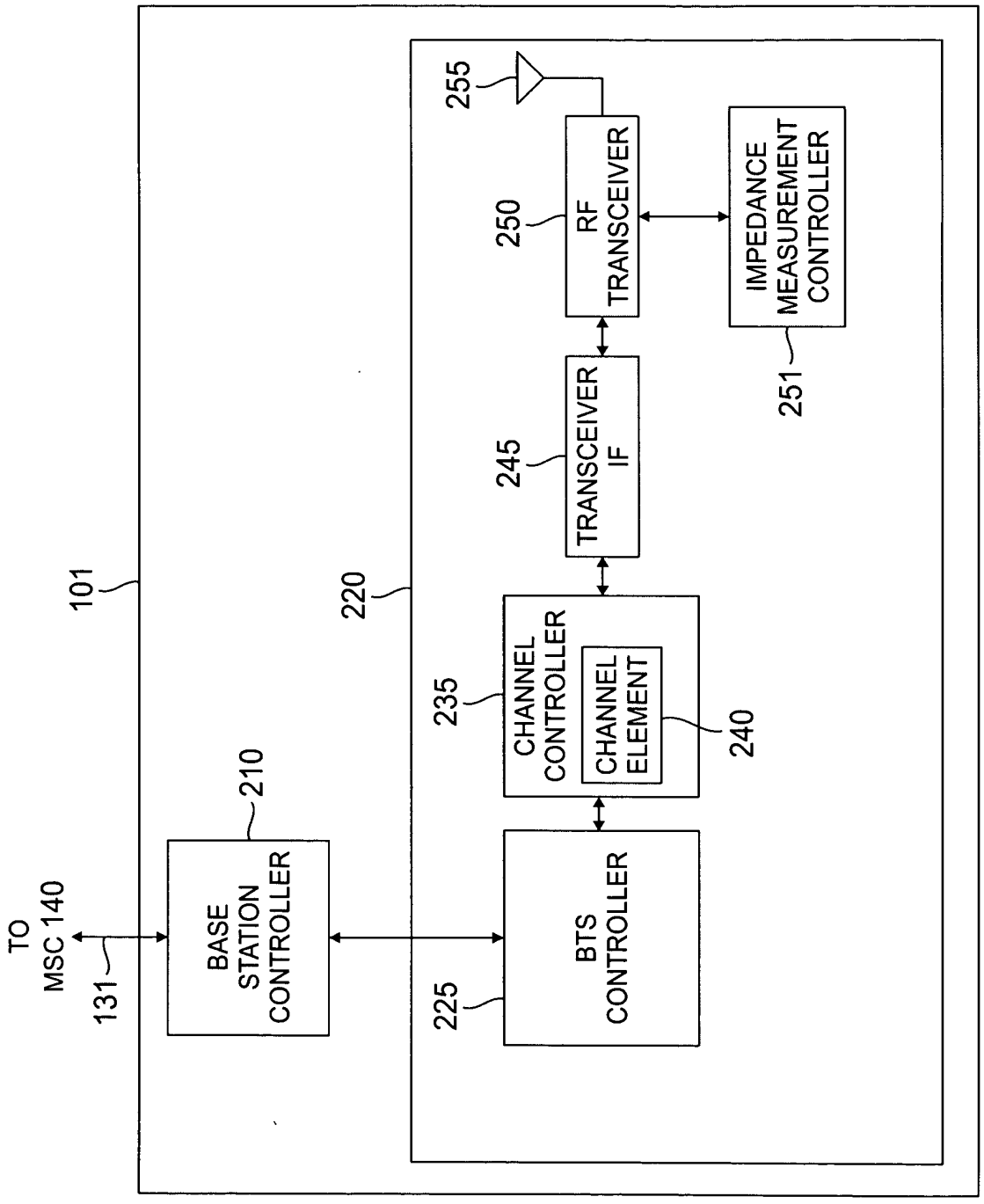

101
220
255
250
RF TRANSCEIVER
IMPEDANCE MEASUREMENT CONTROLLER
251
245
TRANSCEIVER IF
235
CHANNEL CONTROLLER
CHANNEL ELEMENT
240
210
BASE STATION CONTROLLER
BTS CONTROLLER
225
TO MSC 140
131

FIG. 2

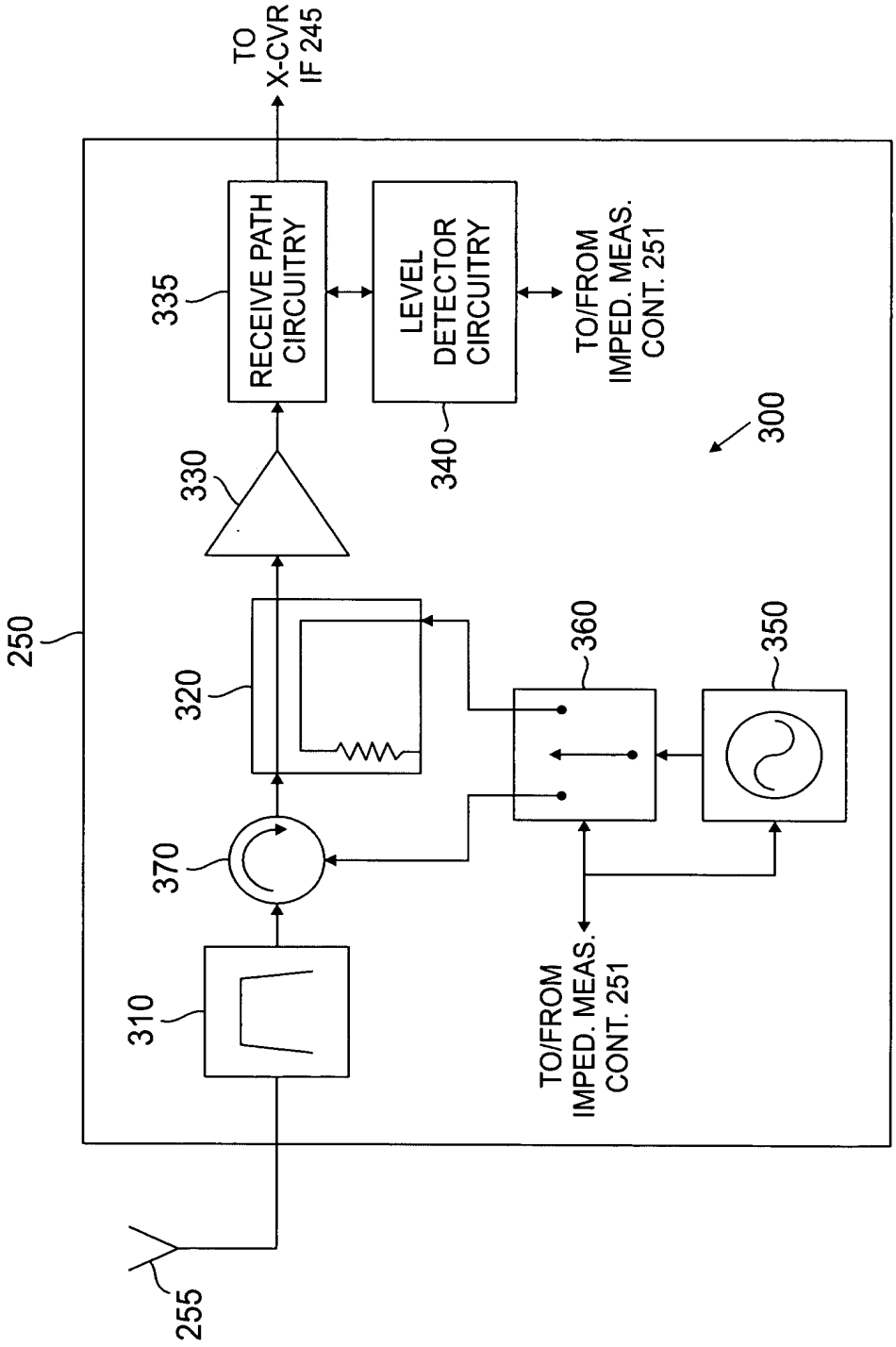

TO
X-CVR
IF 245
335
RECEIVE PATH
CIRCUITRY
LEVEL
DETECTOR
CIRCUITRY
TO/FROM
IMPED. MEAS.
CONT. 251
340
330
300
250
320
360
350
370
310
TO/FROM
IMPED. MEAS.
CONT. 251
255

FIG. 3

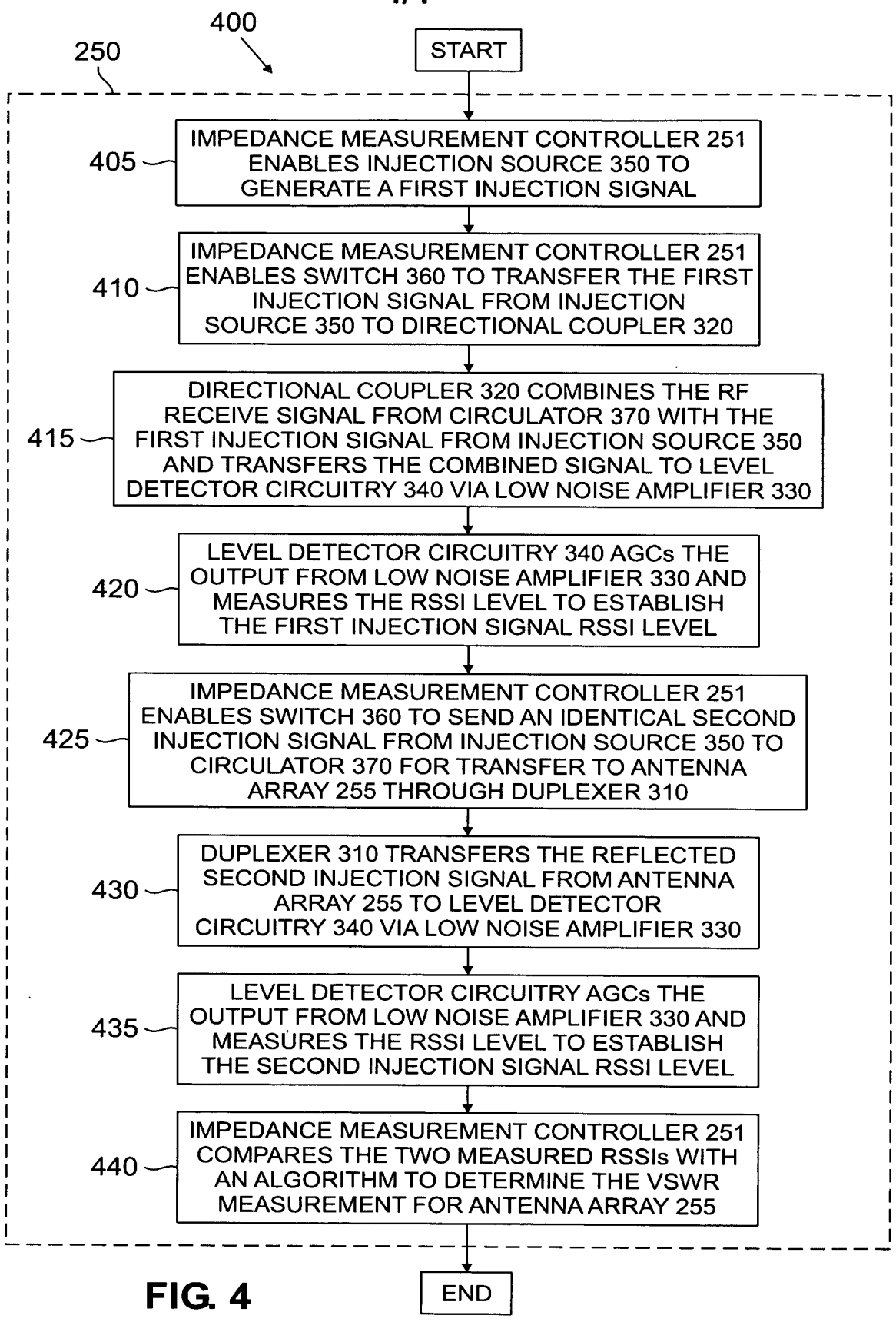

400
250
START
405
IMPEDANCE MEASUREMENT CONTROLLER 251 ENABLES INJECTION SOURCE 350 TO GENERATE A FIRST INJECTION SIGNAL
410
IMPEDANCE MEASUREMENT CONTROLLER 251 ENABLES SWITCH 360 TO TRANSFER THE FIRST INJECTION SIGNAL FROM INJECTION SOURCE 350 TO DIRECTIONAL COUPLER 320
415
DIRECTIONAL COUPLER 320 COMBINES THE RF RECEIVE SIGNAL FROM CIRCULATOR 370 WITH THE FIRST INJECTION SIGNAL FROM INJECTION SOURCE 350 AND TRANSFERS THE COMBINED SIGNAL TO LEVEL DETECTOR CIRCUITRY 340 VIA LOW NOISE AMPLIFIER 330
420
LEVEL DETECTOR CIRCUITRY 340 AGCs THE OUTPUT FROM LOW NOISE AMPLIFIER 330 AND MEASURES THE RSSI LEVEL TO ESTABLISH THE FIRST INJECTION SIGNAL RSSI LEVEL
425
IMPEDANCE MEASUREMENT CONTROLLER 251 ENABLES SWITCH 360 TO SEND AN IDENTICAL SECOND INJECTION SIGNAL FROM INJECTION SOURCE 350 TO CIRCULATOR 370 FOR TRANSFER TO ANTENNA ARRAY 255 THROUGH DUPLEXER 310
430
DUPLEXER 310 TRANSFERS THE REFLECTED SECOND INJECTION SIGNAL FROM ANTENNA ARRAY 255 TO LEVEL DETECTOR CIRCUITRY 340 VIA LOW NOISE AMPLIFIER 330
435
LEVEL DETECTOR CIRCUITRY AGCs THE OUTPUT FROM LOW NOISE AMPLIFIER 330 AND MEASURES THE RSSI LEVEL TO ESTABLISH THE SECOND INJECTION SIGNAL RSSI LEVEL
440
IMPEDANCE MEASUREMENT CONTROLLER 251 COMPARES THE TWO MEASURED RSSIs WITH AN ALGORITHM TO DETERMINE THE VSWR MEASUREMENT FOR ANTENNA ARRAY 255
END

FIG. 4